

**STATE OF IOWA  
BEFORE THE IOWA UTILITIES BOARD**

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<b>IN RE:</b>	)	
	)	
<b>MIDAMERICAN ENERGY COMPANY</b>	)	<b>DOCKET NO. EPB-2014-0156</b>
	)	
<b>INTERSTATE POWER AND LIGHT COMPANY</b>	)	<b>DOCKET NO. EPB-2014-0150</b>
	)	

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**Response to Iowa Utilities Board Questions on EPA Proposed 111(d) Rules**

At the July 22, 2014 Iowa Department of Natural Resources 111(d) stakeholder meeting, the Iowa Utilities Board presented a list of questions designed to help inform whether to file comments and the content of those comments. The Board asked stakeholders to voluntarily submit responses. Many of the questions are relevant to issues in the Emission Plan and Budget filings.

The Emission Plan and Budget dockets were established by the legislature in Iowa Code Section 476.6(21). The code noted “[i]t is the intent of the general assembly that the state, through a collaborative effort involving state agencies and affected generation owners, provide for compatible statewide environmental and electric energy policies with respect to regulated emissions from rate-regulated electric power generating facilities in the state that are fueled by coal.” Iowa Code § 476.6(21)(a). In reviewing emission plans, the code directs the Board to consider “whether the plan or update and the associated budget reasonably balance costs, environmental requirements, economic development potential, and the reliability of the electric generation and transmission system.” Iowa Code § 476.6(21)(c).

The EPA’s carbon pollution standards were discussed in both MidAmerican and Interstate Power & Light’s filed plan updates in advance of EPA’s proposal. While the proposed

carbon pollution standards are not final, understanding how EPA developed the standard and the compliance options under the proposed standard will be critical for future development of compatible environmental and energy policies as well as evaluation of future emission plans and budgets. Therefore, we think that the Board's questions are relevant to the pending EPB dockets and are submitting our response to those comments in these dockets to further the collaborative effort called for by Iowa code.

The Iowa Environmental Council and Environmental Law & Policy Center provide the following comments to the questions posed by the Board.

**Q1. Is the EPA list of Iowa affected facilities correct? If not, what information needs to be changed?**

The Iowa utilities are in the best position to respond to this question. We suggest utilities be required to list any affected units as part of the Emissions Plan and Budget dockets.

**Q2. Are the numbers EPA used to calculate Iowa's baseline and reductions and goals correct? If not, what information needs to be changed?**

We have been able to recreate EPA's calculation of Iowa's baseline and goals using publicly available information. We are not aware of any errors in that data, but we think that the utilities are in the best position to address whether or not there were any errors in the data that EPA used in its calculations.

**Q3. Are the types of generation EPA used to calculate Iowa's baseline and reductions and goal correct? If not, what should be included and why? (For example, should all existing nuclear and hydro be used?)**

While we are still evaluating the specifics of the plan, the inclusion of energy efficiency and renewable energy as part of the best system of emission reduction is appropriate and supported by the Iowa experience.

Wind energy installations have increased significantly in Iowa in the past decade.<sup>1</sup>

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<sup>1</sup> Energy Information Administration, Iowa's Electric Profile; American Wind Energy Association.

<b>Year</b>	<b>Wind Capacity Installed (MW)</b>
2005	820
2006	921
2007	1,170
2008	2,638
2009	3,352
2010	3,569
2011	4,203
2012	5,005
2013	5,177
2014/2015 (projected)	6,232

Wind energy accounted for 27.4% of total electricity generation in 2013.<sup>2</sup> Iowa has the potential to develop approximately 570,000 MW of wind, which translates to 44 times Iowa's current electricity needs.<sup>3</sup> Transmission improvements that are proposed, planned or currently underway will allow for approximately 5,000 MW of additional wind development in the near future.<sup>4</sup> Iowa has been effectively adding wind generation to its energy portfolio and has the potential to add significantly more wind to its energy portfolio. Wind energy is a demonstrated, economically viable option that has and will continue to help reduce carbon emissions. It is appropriate to include renewable generation like wind as part of a best system of emission reduction.

Similarly, energy efficiency is a demonstrated, economically viable resource in Iowa. All Iowa utilities implement energy efficiency programs and have been implementing these programs for years. In the most recent five year plan cycle, the investor-owned utilities regularly had savings over 1% of annual electricity sales. These savings levels are anticipated to be maintained over the next five years, and as discussed in more detail below, there is significantly

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<sup>2</sup> American Wind Energy Association, Iowa Wind Energy (last updated April 10, 2014).

<sup>3</sup> American Wind Energy Association, Iowa Wind Energy (last updated April 10, 2014).

<sup>4</sup> Iowa Wind Energy Association, Wind Power Facts (identifies 4,000 MW for the Rock Island Clean Line transmission line; other lines are being developed as well).

more economically achievable energy efficiency that has already been identified. Based on the Iowa experience, energy efficiency is appropriately included as part of a best system of emission reduction for reducing carbon emissions.

#### **Q4. Did EPA give Iowa appropriate credit for Iowa's early actions between 2005 & 2012?**

Iowa's early efforts to develop a clean energy portfolio are treated favorably under the proposed rules.

##### *Credit for Renewable Energy Efforts:*

To establish state-specific carbon emission goals, the EPA set renewable energy generation targets for states based on regional performance and growth factors. Credit was given to states, like Iowa, who are already out-performing their region. For example, the EPA set a goal for North Central states (including Iowa) to achieve 15.114% of their annual energy generation from renewable sources by 2030.

To calculate Iowa's renewable generation target for 2030, the EPA multiplied the state's total in-state generation in 2012 by the North Central Region's Renewable Generation Target:

- Total in-state generation in Iowa in 2012 (unadjusted) = 56,675,403.92 MWh
- North Central Regional Renewable Generation Target = 15.114%
  - $(56,675,403.92 \times 15.114\%)$

Iowa's 2030 Renewable Generation Goal = **8,565,921 MWh**

To achieve regional renewable targets by 2030, the EPA applied a 6% annual growth factor to each state's actual 2012 renewable energy generation, beginning in 2017 through 2029.

In 2012, Iowa had already achieved its regionally-based renewable target of 15.114% (or 8,565,921 MWh), with over 25% of its energy generation derived from renewables (14,183,424 MWh). **The EPA gives Iowa credit for this achievement in its goal computation, capping its annual renewable goal during 2017-2029 at the regional generation target of 15.114%**

**(8,565,921 MWh) and not applying a growth factor to its actual renewable generation in 2012 (14,183,424 MWh).**

**EPA's Emissions Rate Goal Formula:** = [(Hist. Coal Gen. x Coal Emission Rate) + (Hist. NGCC Gen. x NGCC Emission Rate) + (Hist. O/G Gen. x O/G Emission Rate) + ("Other" Gen. x Other Emission Rate)] / Coal gen. + NGCC Gen. + O/G Gen. + "Other" Gen. + Nuclear Gen. + **Renewable Gen.** + Energy Eff. Gen.

**Iowa's Adjusted Emissions Rate Goal:** [(26,779,114 x 2116) + (7,771,468 x 894) + (247,181 x 2,422) + (0 x 0)] / 26,779,114 + 7,771,468 + 247,181 + 0 + 277,784 + **8,565,921** + 5,729,927.58

Iowa's 2030 Emissions Rate Goal = **1,301 lbs/MWh**

Using this adjusted, regionally-based renewable energy generation target to establish Iowa's emissions rate goal for 2030, the EPA set Iowa's final emissions goal at 1,301 lbs/MWh. This amounts to a 16% reduction from its current emissions rate of 1,552 lbs/MWh – the 5<sup>th</sup> lowest reduction margin in the U.S.

**If the EPA had used Iowa's actual renewable energy generation in 2012 to establish its emission reduction goal for 2030, Iowa's goal would have been much more stringent: 1,168 lbs/MWh.** This amounts to a 25% reduction in Iowa's current emissions rate.

**EPA's Emissions Rate Goal Formula:** = [(Hist. Coal Gen. x Coal Emission Rate) + (Hist. NGCC Gen. x NGCC Emission Rate) + (Hist. O/G Gen. x O/G Emission Rate) + ("Other" Gen. x Other Emission Rate)] / Coal gen. + NGCC Gen. + O/G Gen. + "Other" Gen. + Nuclear Gen. + **Renewable Gen.** + Energy Eff. Gen.

**Iowa's Unadjusted Emissions Rate Goal Formula:** [(26,779,114 x 2116) + (7,771,468 x 894) + (247,181 x 2,422) + (0 x 0)] / 26,779,114 + 7,771,468 + 247,181 + 0 + 277,784 + **14,183,424** + 5,729,927.58

*Iowa's 2030 Emissions Rate Goal if actual renewable generation in 2012 was used = **1,168 lbs/MWh***

#### Credit for Coal Plant Retirements & Conversions:

Planned coal plant retirements and conversions in Iowa are also treated favorably under the proposed rule. Iowa's emission reduction goals are based on the 2012 actual emissions of 42 affected units in Iowa. Presently, 3 of these units have already retired (Pella Municipal Power

Plant & Fair Station). An additional 4 units have been announced to retire before the Clean Power Plan performance period (2020-2029). The announced retirements and conversions include:

- Walter Scott (Units 1&2) (announced in Jan. 2013; retiring by April 16, 2016)
- George Neal North (Units 1&2) (announced in Jan. 2013; retiring by April 16, 2016)
- Pella Municipal Power Plant (retired in 2013)
- Earl Wisdom (Unit 1) (Permit issued 8/2013 limits fuel to natural gas and fuel oil)
- Fair Station (Units 1&2) (retired in 2013)
- Ames Electric Services Power Plant (Units 7&8) converting to gas
- Riverside (Unit 5) converting to gas (announced Jan. 2013; completed by April 16, 2016)
- Milton L. Kapp (Unit 2) (converting to gas in 2015)

These current and planned retirements and conversions are not accounted for in Iowa's emission goals, and therefore can be used to help meet Iowa's goal. This means that Iowa is already closer to achieving its 2030 goal without taking any new actions.

**Q5. For each Iowa affected coal facility: Is the 6% heat rate improvement achievable? If not, please explain specifically why not and what percent would be achievable.**

The Iowa utilities are in the best position to respond to this question. We suggest utilities be required to address this as part of the Emission Plan and Budget dockets.

**Q6. For each Iowa affected gas unit: Is the 70% capacity factor achievable? If not, please explain specifically why not and what percent would be achievable.**

The Iowa utilities are in the best position to respond to this question. We suggest utilities be required to address this as part of the Emission Plan and Budget dockets.

IPL has provided limited responses to data requests that would be part of a response to this question. *See* IPL Response to EI Data Request 11, 13 and 14 attached as Exhibit 1.

**Q7. Is the 1.5% annual incremental savings rate due to energy efficiency from years 2020 to 2030 achievable? If not, please explain specifically why not and what percent would be achievable.**

Yes, the 1.5% annual incremental savings rate due to energy efficiency from years 2020 to 2030 is achievable. As part of the recent energy efficiency plan development, the Iowa investor-owned utilities hired The Cadmus Group to conduct the most recent potential study for energy efficiency, *Assessment of Energy and Capacity Savings Potential in Iowa*, which was released in February 2012. The study indicates that Iowa has the technical potential between 2013 and 2023 to save 24% of base sales cumulatively, and the economic potential to save 19% of base sales cumulatively.

The savings goals for the MidAmerican and Alliant energy efficiency plans for 2014-2018 only capture between 1% and 1.2% savings annually. This means that significant savings already identified will still be available in 2018 and going forward through 2023. A 1.5% savings rate starting in 2020 would not come close to exhausting already identified economically achievable savings. In addition, energy efficiency technologies typically improve over time – meaning that more technical potential becomes economically achievable, and new technologies enter the market increasing both technical and economic potential savings. Therefore, there will be more available economically achievable energy efficiency savings in the future than what has already been identified in the Cadmus study. The already-identified energy efficiency savings and the expected new savings from technological advancement will provide more than enough savings to meet a 1.5% energy efficiency annual savings rate.

In addition, the settlements in the Energy Efficiency Plan dockets lay the groundwork to do evaluation, measurement and verification work including development of a technical reference manual and a study of net-to-gross policy that will help position Iowa to best take advantage of the energy efficiency compliance option.

It is also important to acknowledge that the energy efficiency building block is used to determine the Iowa 2030 goal and is not a required compliance option. Iowa has the flexibility under the proposed Clean Power Plan to select a wide range of compliance options. Energy efficiency can and should be a compliance option used in the state implementation plan, but a particular annual savings rate is not a requirement Iowa must follow under the EPA proposal. Iowa could decide to be more aggressive with energy efficiency and use energy efficiency savings rates beyond 1.5%. Based on the Cadmus study, there would be available economically achievable energy efficiency savings to meet a more aggressive savings rate than the 1.5% rate used to develop Iowa's goal.

**Q8. Is the time allowed to develop the initial state plan feasible and reasonable? Is the level of detail required for the initial plan feasible and reasonable given the amount of time allowed to develop it?**

The amount of time allowed to develop a state plan is both feasible and reasonable for Iowa. Stakeholders have already begun efforts to meet and discuss the proposed rules. Continuing this momentum with early efforts to evaluate compliance strategies will help ensure that Iowa stays on track.

The ongoing Emission Plan and Budget dockets provide an opportunity to evaluate compliance options and further prepare to meet a state implementation plan in a timely manner. The Iowa statute provides sufficient flexibility that future EPB update proceedings could take place between EPA issuing a final rule and when a state implementation plan would need to be filed one year later under the projected EPA timeline. The EPB statute contemplates 180 day proceedings filed at least every twenty-four months but with the option for updates to be filed more frequently. Iowa Code § 476.6(21)(d). An EPB update filed three months after the



anticipated final rule is issued would be completed three months before the state implementation plan was due to be filed if the EPB statutory time line was met.

**Q9. Is the time allowed to develop the final state plan feasible and reasonable? Is the level of detail required for the final plan feasible and reasonable given the amount of time allowed to develop it? If not, please explain why it is not and the amount of time we need and why.**

See response to Question 8.

**Q10. How do you anticipate the proposed rule will impact the operation of the MISO market? Is the rule workable within the current MISO market construct?**

The Iowa utilities are in the best position to respond to this question. We suggest utilities be required to address this as part of the Emission Plan and Budget dockets.

**Q11. What do you believe would be the impact on Iowa's target CO2 emissions rate if the EPA were to recalculate emissions targets based on non-Iowa entities' 2012 purchases of RECs or energy from Iowa based wind units?**

The Iowa utilities are in the best position to respond to this question. We suggest utilities be required to address this as part of the Emission Plan and Budget dockets.

**Q12. If Iowa's utilities must use at least some of their wind generation to satisfy Iowa's target CO2 emissions rate instead of selling the associated RECs to other states to satisfy the other states' RPSs, will there be an impact on Iowa customers' electric rates? If yes, do you know what the impact could be? Do Iowa utilities have current multi-year contracts to sell their wind RECs that will impact when their wind generation can be used to satisfy Iowa's target CO2 emissions rate?**

It is our understanding that Iowa's investor owned utilities do not have any contracts that will impact their ability to use their wind generation to satisfy Iowa's target CO2 emissions. *See* MidAmerican Response to EI Data Request 13 attached as Exhibit 2; IPL Response to EI Data Request 17 attached as Exhibit 1. Most REC contracts are short term and the long term contracts have been or can be structured to allow the utility flexibility to reclaim the RECs for regulatory compliance.

We do not know what type of prices Iowa utilities are getting for selling current RECs. Based on our knowledge of the current market, we do not think the current REC prices are likely to be significant, and therefore any potential impact on rates is not likely to be significant. In fact, EPA's proposed plan could create a stronger REC market that would allow Iowa ratepayers to benefit. For example, if Iowa used energy efficiency for its compliance that allowed it to maintain some of its wind RECs, a scenario that is feasible given the credit assumed for Iowa wind as discussed above, there would be RECs available to sell on the market at the new higher price.

**Q13. Have the other participants in the 111(d) collaborative identified any additional information that is needed?**

The Environmental Intervenors have submitted a number of data requests to MidAmerican and IPL related to the EPA's proposed carbon pollution standards. Several of these requests overlap with the Board questions. The data requests related to the carbon pollution standards and the utility responses received to date are attached as Exhibits 1 and 2.

DATE: August 18, 2014

Respectfully submitted,

/s/ Joshua Mandelbaum

Joshua T. Mandelbaum (AT0010151)

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Environmental Intervenors'

Exhibit 1

Interstate Power and Light Company to Environmental Intervenors Data Requests 3 through 17



Alliant Energy Corporate Services, Inc.  
Legal Department  
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Benjamin M. Clark  
Attorney

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August 4, 2014

Mr. Joshua T. Mandelbaum  
Environmental Law & Policy Center  
505 5<sup>th</sup> Avenue, Suite 333  
Des Moines, IA 50309

RE: Interstate Power and Light Company  
Docket No. EPB-2014-0150  
Environmental Intervenors Data Request Nos. 3–8, 10–17, 24, 25 and 27–30

Dear Josh:

Enclosed please find a copy of Interstate Power and Light Company's (IPL) responses to the above-referenced data requests. Attached to this letter is IPL's General Statement and Objection, which is incorporated by reference to various data requests as set forth therein.

Very truly yours,

/s/ Benjamin M. Clark

Benjamin M. Clark  
Attorney

BMC/kjf  
Enclosures

## INTERSTATE POWER AND LIGHT COMPANY'S (IPL) RESPONSES TO ENVIRONMENTAL INTERVENORS' FIRST SET OF DATA REQUESTS

### General Statement and Objection

IPL is not proposing any new emission control initiatives or projects that have not already been proposed and discussed in previous IPL EPB filings, with the exception of the plan to convert M.L. Kapp to a natural gas fired facility in 2015. Rather, IPL is in the process of executing the plans previously settled and approved. As described in the testimony of Terry Kouba, the following projects were included in IPL's 2012 EPB, which was settled between IPL and the OCA, and subsequently approved by the Board:

- Ottumwa Generating Station (OGS) Scrubber Project;
- OGS Baghouse Project;
- OGS Turbine/Generator Upgrade Project;
- Lansing Generating Station (LGS) Scrubber Project;
- Burlington Generating Station, Prairie Creek Generating Station and M.L. Kapp Generating Station "Emission Lite" Emission Control Projects; and
- Planning for emerging water and waste rules.

Therefore, it is these coal-fired generating plant proposals that are at hand for the Board's review and approval in this current EPB.

Longer range issues, including those that may surface due to proposed EPA rules or other changing regulations, are important, but IPL does not expect those to directly impact the decisions that have already been made for its coal-fired fleet, described above. In that regard:

- IPL's strategic plan continues to emphasize a balance supply portfolio that will enable flexibility to comply with future standards.
- IPL is beginning its internal work to evaluate the EPA-proposed Clean Power Plan ("CPP"). However, this is the beginning of a multi-year process. IPL does not expect to have a full understanding of how the proposed CPP will be integrated into our plans until the final rule is issued and state plans are developed accordingly.
- IPL, through its Integrated Resource Plan, has continued to evaluate the impacts of increasing carbon prices on its generation expansion plan. Even at higher levels of carbon pricing, the projects described above are still reasonable.
- IPL has scheduled a meeting with key stakeholders in Des Moines for August 5, at which time IPL expects to provide a better understanding of the longer range planning it has done – a plan that goes beyond the scope of this near term EPB.

With that backdrop, IPL is willing to engage in discussions about these potential impacts on its future supply decisions, as reflected in the questions below. However, IPL also desires to process this EPB filing as efficiently as possible, focusing on the near term

plan. This plan is simply the execution of plans that have previously been communicated and approved.

Therefore, to the extent any data requests propounded by the Environmental Intervenors seek information beyond coal-fired generation emissions during the two-year period 2015-2016, IPL objects as these requests exceed the scope of Iowa Code Section 476.6(21). These requests which seek information not relevant to this EPB docket are referenced back to this General Statement and Objection in an effort to provide concise responses where relevant information exists, although such responses will be subject to this General Statement and Objection as noted.

**Response of  
Interstate Power and Light Company  
to  
ENVIRONMENTAL INTERVENORS  
Data Request No. 3**

Docket Number: EPB-2014-0150  
Date of Request: July 16, 2014  
Response Due: August 5, 2014  
Information Requested By: Joshua Mandelbaum  
Date Responded: August 4, 2014  
Author: Paula Johnson  
Author's Title: Senior Attorney - Regulatory  
Author's Telephone No.: (319) 786-4742  
Subject:  
Reference:

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**Data Request No. 3**

On p. 21 of Stephen Jackson's testimony, he notes that "IPL has developed its environmental compliance and balanced portfolio plans with future rule impacts in mind, providing flexibility to comply with a range of rule assumptions." Please provide any modeling that IPL or Alliant Energy Company did, that was done on behalf of IPL or Alliant, or that was provided to IPL or Alliant to predict or anticipate the impact of and compliance with EPA's carbon pollution standards for existing power plants. Please clearly identify all rule assumptions made in any analysis and modeling. Please describe any compliance options identified as part of IPL's development of its environmental compliance and balanced portfolio plans.

**Response**

Please refer to the foregoing General Statement and Objection.

**Response of  
Interstate Power and Light Company  
to  
ENVIRONMENTAL INTERVENORS  
Data Request No. 4**

Docket Number: EPB-2014-0150  
Date of Request: July 16, 2014  
Response Due: August 5, 2014  
Information Requested By: Joshua Mandelbaum  
Date Responded: August 4, 2014  
Author: Paula Johnson  
Author's Title: Senior Attorney - Regulatory  
Author's Telephone No.: (319) 786-4742  
Subject:  
Reference:

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**Data Request No. 4**

Please provide any modeling that IPL or Alliant Energy Company have done, that was done on behalf of IPL or Alliant, or that was provided to IPL or Alliant related to EPA's proposed carbon pollution standards for existing power plants that were announced on June 2, 2014 and published in the Federal Register on June 18, 2014. Please update the response to this request as new information, modeling and analysis become available.

**Response**

Please refer to the foregoing General Statement and Objection.



**Response of  
Interstate Power and Light Company  
to  
ENVIRONMENTAL INTERVENORS  
Data Request No. 5**

Docket Number: EPB-2014-0150  
Date of Request: July 16, 2014  
Response Due: August 5, 2014  
Information Requested By: Joshua Mandelbaum  
Date Responded: August 4, 2014  
Author: Paula Johnson /Steve Jackson  
Author's Title: Senior Attorney – Regulatory /Mgr Environmental Services  
Author's Telephone No.: (319) 786-4742 / (608) 458-5704  
Subject:  
Reference:

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**Data Request No. 5**

Please provide IPL's total CO2 emissions by year from 2005 to the present. Please provide any projected total CO2 emissions currently available for 2015 to 2030.

**Response**

Subject to the foregoing General Statement and Objection, IPL is providing total CO2 emissions by year from 2005 to 2013 in Table 1 below. This data represents emissions from all fossil generation sources, including jointly owned generating units, and differs from data presented in the 2014 EPB filing which represents CO2 emissions from coal-fired generating units only. As represented by the data below, IPL has been reducing total CO2 since 2005 and expects this trend to continue through the implementation of its balanced portfolio plan.

Table 1 – IPL Total CO2 Emissions 2005 to 2013

Year	CO2 Tons
2005	13,845,067
2006	13,752,753
2007	14,969,189
2008	12,744,252
2009	10,700,926
2010	11,363,096
2011	11,069,649
2012	9,888,848
2013	8,959,503

**Response of  
Interstate Power and Light Company  
to  
ENVIRONMENTAL INTERVENORS  
Data Request No. 6**

Docket Number: EPB-2014-0150  
Date of Request: July 16, 2014  
Response Due: August 5, 2014  
Information Requested By: Joshua Mandelbaum  
Date Responded: August 4, 2014  
Author: Paula Johnson /Steve Jackson  
Author's Title: Senior Attorney – Regulatory /Mgr Environmental Services  
Author's Telephone No.: (319) 786-4742 / (608) 458-5704  
Subject:  
Reference:

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**Data Request No. 6**

Please provide IPL's total MWh of generation by year from 2005 to the present. Please provide any projected annual MWh of generation by year from 2015 to 2030.

**Response**

Subject to the foregoing General Statement and Objection, IPL is providing total net MWh of generation by year from 2005 to 2013 in Table 1 below. This data represents data from all generation sources, including jointly owned generating units, and differs from data that may be presented in the 2014 EPB filing which represents data from coal-fired generating units only. IPL expects generation to increase with slight load growth over time.

Table 1 – IPL Total Net MWh Generation 2005 to 2013

Year	Net MWh
2005	14,766,000
2006	11,689,000
2007	12,452,000
2008	10,523,000
2009	8,856,000
2010	9,616,000
2011	9,574,000
2012	9,000,000
2013	8,286,000

**Response of  
Interstate Power and Light Company  
to  
ENVIRONMENTAL INTERVENORS  
Data Request No. 7**

Docket Number: EPB-2014-0150  
Date of Request: July 16, 2014  
Response Due: August 5, 2014  
Information Requested By: Joshua Mandelbaum  
Date Responded: August 4, 2014  
Author: Paula Johnson  
Author's Title: Senior Attorney - Regulatory  
Author's Telephone No.: (319) 786-4742  
Subject:  
Reference:

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**Data Request No. 7**

On p.46 and 47 of IPL's EPB and p.21 and 22 of the Jackson testimony, IPL lists its principles regarding the development of EPA's carbon pollution standards for existing power plants. Please provide any analysis that IPL or Alliant have done that assess how EPA's proposed rule published in the Federal Register on June 18, 2014 meets IPL's guiding principles.

**Response**

Please refer to the foregoing General Statement and Objection.

**Response of  
Interstate Power and Light Company  
to  
ENVIRONMENTAL INTERVENORS  
Data Request No. 8**

Docket Number: EPB-2014-0150  
Date of Request: July 16, 2014  
Response Due: August 5, 2014  
Information Requested By: Joshua Mandelbaum  
Date Responded: August 4, 2014  
Author: Paula Johnson  
Author's Title: Senior Attorney - Regulatory  
Author's Telephone No.: (319) 786-4742  
Subject:  
Reference:

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**Data Request No. 8**

For each generating unit impacted by EPA's proposed carbon pollution standards, please describe what type of heat rate improvements are possible and include projected cost, if available, for any possible improvements.

**Response**

Please refer to the foregoing General Statement and Objection.

**Response of  
Interstate Power and Light Company  
to  
ENVIRONMENTAL INTERVENORS  
Data Request No. 9**

Docket Number: EPB-2014-0150  
Date of Request: July 16, 2014  
Response Due: August 1, 2014  
Information Requested By: Joshua Mandelbaum  
Date Responded: August 1, 2014  
Author: Steve Jackson  
Author's Title: Manager Environmental Services  
Author's Telephone No.: (608) 458-5704  
Subject:  
Reference:

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**Data Request No. 9**

For each generating unit impacted by EPA's proposed carbon pollution standards, are any of the possible heat rate improvements already planned or announced? If so, please specify.

**Response**

Please refer to the information found at Section II, pages 11 and 37 of IPL's 2014 EPB filing for planned heat rate improvement information.

**Response of  
Interstate Power and Light Company  
to  
ENVIRONMENTAL INTERVENORS  
Data Request No. 10**

Docket Number: EPB-2014-0150  
Date of Request: July 16, 2014  
Response Due: August 5, 2014  
Information Requested By: Joshua Mandelbaum  
Date Responded: August 4, 2014  
Author: Paula Johnson /Steve Jackson  
Author's Title: Senior Attorney – Regulatory /Mgr Environmental Services  
Author's Telephone No.: (319) 786-4742 / (608) 458-5704  
Subject:  
Reference:

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**Data Request No. 10**

For each natural gas combined cycle generating unit in IPL's portfolio, please provide the current dispatch as a percentage of the nameplate capacity.

**Response**

Subject to the foregoing General Statement and Objection, IPL is providing information on current dispatch as a percentage of the nameplate capacity for each natural gas combined cycle generating unit in IPL's portfolio. There is one natural gas combined cycle generating facility in IPL's portfolio – the Emery Generating Station. The facility's average capacity factor for the past two years was approximately 16%.

**Response of  
Interstate Power and Light Company  
to  
ENVIRONMENTAL INTERVENORS  
Data Request No. 11**

Docket Number: EPB-2014-0150  
Date of Request: July 16, 2014  
Response Due: August 5, 2014  
Information Requested By: Joshua Mandelbaum  
Date Responded: August 4, 2014  
Author: Paula Johnson /Steve Jackson  
Author's Title: Senior Attorney – Regulatory /Mgr Environmental Services  
Author's Telephone No.: (319) 786-4742 / (608) 458-5704  
Subject:  
Reference:

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**Data Request No. 11**

For each natural gas combined cycle generating unit in IPL's portfolio, please provide any analysis and modeling that IPL has done related to the impact of increasing the dispatch from the current rate up to 70% of the units' nameplate capacity.

**Response**

Subject to the foregoing General Statement and Objection, IPL has considered the capability of the lone natural gas combined cycle unit in its fleet, the Emery Generating Station, and determined that the equipment at this facility is physically capable of operating at or above a 70% capacity factor. However, IPL has not fully evaluated the impact of increasing the dispatch from the current rate up to 70% of the unit's nameplate capacity.

**Response of  
Interstate Power and Light Company  
to  
ENVIRONMENTAL INTERVENORS  
Data Request No. 12**

Docket Number: EPB-2014-0150  
Date of Request: July 16, 2014  
Response Due: August 5, 2014  
Information Requested By: Joshua Mandelbaum  
Date Responded: August 4, 2014  
Author: Paula Johnson /Steve Jackson  
Author's Title: Senior Attorney – Regulatory /Mgr Environmental Services  
Author's Telephone No.: (319) 786-4742 / (608) 458-5704  
Subject:  
Reference:

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**Data Request No. 12**

Please provide any impacts on the electric grid that IPL has identified or that have been identified by others for IPL related to changing assumptions on the dispatch of its natural gas combined cycle units. For example, how would increasing the capacity factor IPL's natural gas combined cycle units or other combined cycle units affect the ability of IPL and other utilities to load-follow wind generation or meet variations in load?

**Response**

Subject to the foregoing General Statement and Objection, IPL has not fully evaluated impacts on the electric grid by changing assumptions on the dispatch of its natural gas combined cycle units. IPL understands that the Midcontinent Independent System Operator, Inc. (MISO) is preparing to model resource adequacy and reliability impacts from the proposed CPP and that IPL will participate in model outcome discussions.



**Response of  
Interstate Power and Light Company  
to  
ENVIRONMENTAL INTERVENORS  
Data Request No. 13**

Docket Number: EPB-2014-0150  
Date of Request: July 16, 2014  
Response Due: August 5, 2014  
Information Requested By: Joshua Mandelbaum  
Date Responded: August 4, 2014  
Author: Paula Johnson /Steve Jackson  
Author's Title: Senior Attorney – Regulatory /Mgr Environmental Services  
Author's Telephone No.: (319) 786-4742 / (608) 458-5704  
Subject:  
Reference:

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**Data Request No. 13**

Please provide any impacts or information on natural gas pipelines that IPL has identified or that have been identified by others for IPL related to changing assumptions on the dispatch of natural gas combined cycle units.

**Response**

Subject to the foregoing General Statement and Objection, the current natural gas pipeline serving the Emery Generating Station has the physical capability to provide natural gas to operate Emery at 70% capacity. However, as presented in Data Request Nos. 11 and 12, IPL has not fully evaluated impacts or changes to dispatch of natural gas combined cycle units. Further IPL does not have information on impacts on natural gas pipelines related to changing assumptions due to increased dispatch of natural gas combined cycle units.

**Response of  
Interstate Power and Light Company  
to  
ENVIRONMENTAL INTERVENORS  
Data Request No. 14**

Docket Number: EPB-2014-0150  
Date of Request: July 16, 2014  
Response Due: August 5, 2014  
Information Requested By: Joshua Mandelbaum  
Date Responded: August 4, 2014  
Author: Paula Johnson /Steve Jackson  
Author's Title: Senior Attorney – Regulatory /Mgr Environmental Services  
Author's Telephone No.: (319) 786-4742 / (608) 458-5704  
Subject:  
Reference:

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**Data Request No. 14**

Is there sufficient pipeline capacity at IPL's existing and under-construction natural gas combined cycle units to increase capacity factor to 70%?

**Response**

Subject to the foregoing General Statement and Objection, yes, there is sufficient pipeline capacity at IPL's existing natural gas combined cycle unit, and there will be sufficient pipeline capacity for the under-construction natural gas combined cycle unit to achieve a 70% capacity factor.

**Response of  
Interstate Power and Light Company  
to  
ENVIRONMENTAL INTERVENORS  
Data Request No. 15**

Docket Number: EPB-2014-0150  
Date of Request: July 16, 2014  
Response Due: August 5, 2014  
Information Requested By: Joshua Mandelbaum  
Date Responded: August 4, 2014  
Author: Paula Johnson /Steve Jackson  
Author's Title: Senior Attorney – Regulatory /Mgr Environmental Services  
Author's Telephone No.: (319) 786-4742 / (608) 458-5704  
Subject:  
Reference:

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**Data Request No. 15**

Has IPL analyzed the impact to Iowa if natural gas combined cycle units in the region increase capacity factor to 70%? If so, please provide this analysis.

**Response**

Subject to the foregoing General Statement and Objection, no, IPL has not analyzed the impact to Iowa if natural gas combined cycle units in the region increase capacity factor to 70%.

**Response of  
Interstate Power and Light Company  
to  
ENVIRONMENTAL INTERVENORS  
Data Request No. 16**

Docket Number: EPB-2014-0150  
Date of Request: July 16, 2014  
Response Due: August 5, 2014  
Information Requested By: Joshua Mandelbaum  
Date Responded: August 4, 2014  
Author: Paula Johnson  
Author's Title: Senior Attorney - Regulatory  
Author's Telephone No.: (319) 786-4742  
Subject:  
Reference:

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**Data Request No. 16**

On p. 20 of his testimony, Terry Kouba noted that IPL's is considering options to add more renewable resources and reduce demand through existing and new energy efficiency programs. Please provide any modeling and analysis related to these options that IPL has done.

**Response**

Please refer to the foregoing General Statement and Objection.

**Response of  
Interstate Power and Light Company  
to  
ENVIRONMENTAL INTERVENORS  
Data Request No. 17**

Docket Number: EPB-2014-0150  
Date of Request: July 16, 2014  
Response Due: August 5, 2014  
Information Requested By: Joshua Mandelbaum  
Date Responded: August 4, 2014  
Author: Paula Johnson /Steve Jackson  
Author's Title: Senior Attorney – Regulatory /Mgr Environmental Services  
Author's Telephone No.: (319) 786-4742 / (608) 458-5704  
Subject:  
Reference:

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**Data Request No. 17**

Renewable energy is a compliance option for EPA's proposed carbon pollution standards. Please list all of the Renewable Energy Credits (RECs) from IPL and Alliant Energy Company renewable generation. For each of the RECs, please list if the company has sold the RECs or which Alliant Energy Co. subsidiary controls the REC, and for those RECs that have been sold, the buyer of the RECs, the sale price of the RECs, and if the RECs are used to comply with a state Renewable Portfolio Standard.

**Response**

Subject to the foregoing General Statement and Objection, for a projection of annual RECs and description of renewable activities please refer to IPL's 2014 IRP, Section 7.3 beginning on page 7-2, as well as Appendix 7A and Appendix 7B which are referred to in Section 7.3. At this time, IPL has not made a commitment to sell forward (future) RECs.

Environmental Intervenors'

Exhibit 2

First Set of Data Requests to MidAmerican Energy Company Requests 3 through 15

**ENVIRONMENTAL INTERVENORS'**  
**First Set of Data Requests to MidAmerican Energy Company**  
**Docket No. EPB-2014-0156**

Date: 8/8/14

Party: MidAmerican Energy Company

Witness:

Reference:

Instructions: For each response, please provide the name and title of the person providing the response.

---

Responder Name: Suzan Stewart  
Job Title: Managing Sr. Attorney  
Phone: 712-277-7587

3. Please provide any modeling and analysis that MidAmerican did, that was done on behalf of MidAmerican or that was provided to MidAmerican to predict or anticipate the impact of and compliance with EPA's carbon pollution standards for existing power plants.

Response:

MidAmerican Energy Company objects to this data response as irrelevant and outside of the scope of this proceeding. Pursuant to Iowa Code § 476.6(21), the review in the EPB proceeding is limited to air quality requirements pertinent to coal-fired generation plants existing as of 2001 and improvements during the plan period of 2014-16. Notwithstanding this objection, no such modeling or analysis is available.

**ENVIRONMENTAL INTERVENORS'**  
**First Set of Data Requests to MidAmerican Energy Company**  
**Docket No. EPB-2014-0156**

Date: 8/8/14

Party: MidAmerican Energy Company

Witness:

Reference:

Instructions: For each response, please provide the name and title of the person providing the response.

---

Responder Name: Suzan Stewart  
Job Title: Managing Sr. Attorney  
Phone: 712-277-7587

4. Please provide any modeling or analysis that MidAmerican did, that was done on behalf of MidAmerican or that was provided to MidAmerican related to EPA's proposed carbon pollution standards for existing power plants that were announced on June 2, 2014 and published in the Federal Register on June 18, 2014. Please update the response to this request as new information, modeling and analysis become available.

Response:

MidAmerican Energy Company objects to this data response as irrelevant and outside of the scope of this proceeding. Pursuant to Iowa Code § 476.6(21), the review in the EPB proceeding is limited to air quality requirements pertinent to coal-fired generation plants existing as of 2001 and improvements during the plan period of 2014-16. Notwithstanding this objection, no such modeling or analysis is available.



**ENVIRONMENTAL INTERVENORS'**  
**First Set of Data Requests to MidAmerican Energy Company**  
**Docket No. EPB-2014-0156**

Date: 8/8/14

Party: MidAmerican Energy Company

Witness: McIvor

Reference:

Instructions: For each response, please provide the name and title of the person providing the response.

---

Responder Name: Jennifer McIvor  
Job Title: Vice President, Environmental Programs  
Phone: 712-352-5434

5. Please provide MidAmerican's total CO<sub>2</sub> emissions by year from 2005 to the present. Please provide any projected total CO<sub>2</sub> emissions currently available for 2015 to 2030.

Response:

MidAmerican objects to this data request as not relevant to this EPB proceeding, which is limited to the reasonableness of improvements to meet air quality requirements made during the period of 2014-16 to existing coal-fired generators in service as of 2001. MidAmerican further objects to this data request as overbroad and burdensome. Notwithstanding this objection, past-actual emissions data are readily available from public sources. For the reader's convenience, that data are summarized below.

<b>Year</b>	<b>CO<sub>2</sub> Emissions (tons)</b>
2005	20,260,020
2006	20,099,346
2007	21,922,678
2008	24,735,276
2009	23,074,290
2010	25,831,702
2011	23,324,348
2012	21,226,113
2013	19,972,367

**ENVIRONMENTAL INTERVENORS'**  
**First Set of Data Requests to MidAmerican Energy Company**  
**Docket No. EPB-2014-0156**

Date: 8/8/14

Party: MidAmerican Energy Company

Witness:

Reference:

Instructions: For each response, please provide the name and title of the person providing the response.

---

Responder Name: Jennifer McIvor  
Job Title: Vice President, Environmental Programs  
Phone: 712-352-5434

6. Please provide MidAmerican's total MWh of generation by year from 2005 to the present. Please provide any projected annual MWh of generation by year from 2015 to 2030.

Response:

MidAmerican objects to this data request as not relevant to this EPB proceeding, which is limited to the reasonableness of improvements to meet air quality requirements made during the period of 2014-16 to existing coal-fired generators in service as of 2001. MidAmerican further objects to this data request as overbroad and burdensome. Notwithstanding this objection, past-actual generation data are readily available from public sources. For the reader's convenience, those data are summarized below.

<b>Year</b>	<b>Generation (MWh-gross)</b>
2005	23,937,434
2006	24,516,220
2007	27,852,420
2008	31,470,017
2009	30,241,792
2010	33,233,620
2011	31,169,444
2012	31,968,026
2013	31,379,494

**ENVIRONMENTAL INTERVENORS'**  
**First Set of Data Requests to MidAmerican Energy Company**  
**Docket No. EPB-2014-0156**

Date: 8/8/14

Party: MidAmerican Energy Company

Witness:

Reference:

Instructions: For each response, please provide the name and title of the person providing the response.

---

Responder Name: Dean Crist  
Job Title: Vice President, Regulation  
Phone: (515) 281-2233

7. For each generating unit impacted by EPA's proposed carbon pollution standards, please describe what type of heat rate improvements are possible and include projected cost, if available, for any possible improvements.

Response:

MidAmerican objects to this data request as not relevant to this EPB proceeding which is limited to the reasonableness of improvements to meet air quality requirements made during the period of 2014-16 to existing coal-fired generators in service as of 2001. MidAmerican further objects to this data request as overbroad and burdensome. Notwithstanding this objection, the EPA's Section 111(d) rule is not yet finalized. MidAmerican cannot predict its compliance obligations, including any potential heat rate improvements, until the final rule is available for review.

**ENVIRONMENTAL INTERVENORS'**  
**First Set of Data Requests to MidAmerican Energy Company**  
**Docket No. EPB-2014-0156**

Date: 8/8/14

Party: MidAmerican Energy Company

Witness:

Reference:

Instructions: For each response, please provide the name and title of the person providing the response.

---

Responder Name: Jennifer McIvor  
Job Title: Vice President, Environmental Programs  
Phone: 712-352-5434

8. For each generating unit impacted by EPA's proposed carbon pollution standards, are any of the possible heat rate improvements already planned or announced? If so, please specify.

Response:

MidAmerican objects to this data request as not relevant to this EPB proceeding which is limited to the reasonableness of improvements to meet air quality requirements made during the period of 2014-16 to existing coal-fired generators in service as of 2001. MidAmerican further objects to this data request as overbroad and burdensome. Notwithstanding this objection, MidAmerican does not have any heat rate improvements projects planned or announced at this time.

**ENVIRONMENTAL INTERVENORS'**  
**First Set of Data Requests to MidAmerican Energy Company**  
**Docket No. EPB-2014-0156**

Date: 8/8/14

Party: MidAmerican Energy Company

Witness: N/A

Reference: N/A

Instructions: For each response, please provide the name and title of the person providing the response.

---

Responder Name: Dean Crist  
Job Title: Vice President, Regulation  
Phone: (515) 281-2233

9. For each natural gas combined cycle generating unit in MidAmerican's portfolio, please provide the current dispatch as a percentage of the nameplate capacity.

Response:

MidAmerican objects to this data response as irrelevant and outside of the scope of this proceeding. Pursuant to Iowa Code § 476.6(21), the review in the EPB proceeding is limited to coal-fired generation plants existing as of 2001 and improvements during the plan period of 2014-16. Notwithstanding this objection, MidAmerican provides this response.

Attachment 9-1 provides capacity factors for MidAmerican's only combined cycle generating unit, the Greater Des Moines Energy Center.

Attachment 9-1

Greater Des Moines Energy Center - Net Annual Capacity Factors

Year	Net Generation	Net Peak Demand - MW	Annual Capacity Factor
2005	679,086	497.0	15.6%
2006	817,115	497.0	18.8%
2007	1,101,195	449.0	28.0%
2008	1,043,125	476.0	24.9%
2009	338,376	461.0	8.4%
2010	448,882	477.0	10.7%
2011	257,786	482.0	6.1%
2012	541,940	489.0	12.6%
2013	215,258	492.0	5.0%

Net Generation - MWh per FERC Form 1 page 402-3 Steam-Electric Generating Plant Statistics Line 12

Net Peak Demand per FERC Form 1 page 402-3 Steam-Electric Generating Plant Statistics Line 6

**ENVIRONMENTAL INTERVENORS'**  
**First Set of Data Requests to MidAmerican Energy Company**  
**Docket No. EPB-2014-0156**

Date: 8/8/14

Party: MidAmerican Energy Company

Witness: N/A

Reference: N/A

Instructions: For each response, please provide the name and title of the person providing the response.

---

Responder Name: Dean Crist  
Job Title: Vice President, Regulation  
Phone: (515) 281-2233

10. For each natural gas combined cycle generating unit in MidAmerican's portfolio, please provide any analysis and modeling that MidAmerican has done related to the impact of increasing the dispatch from the current rate up to 70% of the units' nameplate capacity.

Response:

MidAmerican Energy Company objects to this data response as irrelevant and outside of the scope of this proceeding. Pursuant to Iowa Code § 476.6(21), the review in the EPB proceeding is limited to coal-fired generation plants existing as of 2001 and improvements during the plan period of 2014-16.

Notwithstanding this objection, MidAmerican responds that it has not conducted any such analysis or modeling.

**ENVIRONMENTAL INTERVENORS'**  
**First Set of Data Requests to MidAmerican Energy Company**  
**Docket No. EPB-2014-0156**

Date: 8/8/14

Party: MidAmerican Energy Company

Witness:

Reference:

Instructions: For each response, please provide the name and title of the person providing the response.

---

Responder Name: Suzan Stewart  
Job Title: Managing Sr. Attorney  
Phone: 712-277-7587

11. Please describe any impacts on the electric grid that MidAmerican has identified or that have been identified by others for MidAmerican related to changing assumptions on the dispatch of its natural gas combined cycle units. For example, how would increasing the capacity factor MidAmerican's natural gas combined cycle units or other combined cycle units affect the ability of MidAmerican and other utilities to load-follow wind generation or meet variations in load?

Response:

MidAmerican Energy Company objects to this data response as irrelevant and outside of the scope of this proceeding. Pursuant to Iowa Code § 476.6(21), the review in the EPB proceeding is limited to air quality requirements pertinent to coal-fired generation plants existing as of 2001 and improvements during the plan period of 2014-16.



**ENVIRONMENTAL INTERVENORS'**  
**First Set of Data Requests to MidAmerican Energy Company**  
**Docket No. EPB-2014-0156**

Date: 8/8/14

Party: MidAmerican Energy Company

Witness:

Reference:

Instructions: For each response, please provide the name and title of the person providing the response.

---

Responder Name: Suzan Stewart  
Job Title: Managing Sr. Attorney  
Phone: 712-277-7587

12. Please provide any impacts or information on natural gas pipelines that MidAmerican has identified or that have been identified by others for MidAmerican related to changing assumptions on the dispatch of natural gas combined cycle units.

Response:

MidAmerican Energy Company objects to this data response as irrelevant and outside of the scope of this proceeding. Pursuant to Iowa Code § 476.6(21), the review in the EPB proceeding is limited to air quality requirements pertinent to coal-fired generation plants existing as of 2001 and improvements during the plan period of 2014-16.

**ENVIRONMENTAL INTERVENORS'**  
**First Set of Data Requests to MidAmerican Energy Company**  
**Docket No. EPB-2014-0156**

Date: 8/8/14

Party: MidAmerican Energy Company

Witness:

Reference:

Instructions: For each response, please provide the name and title of the person providing the response.

---

Responder Name: Suzan Stewart  
Job Title: Managing Sr. Attorney  
Phone: 712-277-7587

13. Is there sufficient pipeline capacity at MidAmerican's existing and planned natural gas combined cycle units to increase capacity factor to 70%?

Response:

MidAmerican Energy Company objects to this data response as irrelevant and outside of the scope of this proceeding. Pursuant to Iowa Code § 476.6(21), the review in the EPB proceeding is limited to air quality requirements pertinent to coal-fired generation plants existing as of 2001 and improvements during the plan period of 2014-16.

**ENVIRONMENTAL INTERVENORS'**  
**First Set of Data Requests to MidAmerican Energy Company**  
**Docket No. EPB-2014-0156**

Date: 8/8/14

Party: MidAmerican Energy Company

Witness:

Reference:

Instructions: For each response, please provide the name and title of the person providing the response.

---

Responder Name: Suzan Stewart  
Job Title: Managing Sr. Attorney  
Phone: 712-277-7587

14. Has MidAmerican analyzed the impact to Iowa if natural gas combined cycle units in the region increase capacity factor to 70%? If so, please provide this analysis.

Response:

MidAmerican Energy Company objects to this data response as irrelevant and outside of the scope of this proceeding. Pursuant to Iowa Code § 476.6(21), the review in the EPB proceeding is limited to air quality requirements pertinent to coal-fired generation plants existing as of 2001 and improvements during the plan period of 2014-16.

**ENVIRONMENTAL INTERVENORS'**  
**First Set of Data Requests to MidAmerican Energy Company**  
**Docket No. EPB-2014-0156**

Date: 8/8/14

Party: MidAmerican Energy Company

Witness: N/A

Reference: N/A

Instructions: For each response, please provide the name and title of the person providing the response.

---

Responder Name: Dean Crist  
Job Title: Vice President  
Phone: (515) 281-2233

15. Renewable energy is a compliance option for EPA's proposed carbon pollution standards. Please list all of the Renewable Energy Credits (RECs) from MidAmerican renewable generation. For each of the RECs, please list if MidAmerican has sold the RECs or MidAmerican continues to control the REC, and for those RECs that have been sold, the buyer of the RECs, the sale price of the RECs, and if the RECs are used to comply with a state Renewable Portfolio Standard.

Response:

As discussed with the Environmental Intervenor previously, below is the information we agreed to supply.

RECs are tracked by specific information about the renewable energy generated, including where, when, at what facility, and with what type of generation.

Companies such as Green-e provide the certification and verification framework of the certificates. Green-e verifies that RECs are not sold from a wind farm more than once or claimed by more than one party. Green-e rules permit production for the current year, last 6 months of the prior year, and 3 months after the compliance year to qualify for Green-e certified programs.

There are several regional tracking systems in operation in the U.S. In addition to owned renewable generation, MidAmerican Energy buys output from the Buena Vista wind farm, the Metro Methane Recovery facility and the Davenport Waste Water facility. These facilities and

some of MidAmerican's wind farms are tracked in the Midwest Renewable Energy Tracking System. Another MidAmerican wind farm is tracked in PJM's Generation Attribute Tracking System.

RECs are sold through brokers or directly to counterparties through bilateral contracts. RECs are sold based on production vintage, such as a six month period, as specified at the time of sale. They may be sold forward or based on existing production. MidAmerican negotiates a REC sales contract to document the terms of the transaction, including such items as transfer method, payment, credit terms, vintage, source, delivery date, price, and volume.

MidAmerican made 58 REC sales in 2013. These REC sales were for 2012 through 2014 vintages and some will not be delivered until 2014.